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Northeastern Area
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JACK-PINE BUDWORM EARLY INSTAR LARVAL SURVEY ON THE HURON-MANISTEE N.F.

I. Millers and T. Eiber

INTRODUCTION

The jack-pine budworm is a perenial pest of jack and red pine in the Lake States. The damage from defoliation results in growth reduction, top-kill, or tree mortality, depending on the severity of defoliation.

Predictions of budworm outbreaks and defoliation have been inaccurate To improve the predictions, annual evaluation surveys were inaugurated to determine the following:

1. To determine the degree of budworm population fluctuations during pre-outbreak periods.

2. To determine the effect of previous pine defoliation on the budworm populations.

3. To determine how much defoliation occurs from a given larval population.

This report covers the results of early larval collections made in June, 1969, and compares the populations with egg survey results from the previous fall.

METHODS

The detailed sampling plans are described in the original evaluation plan (Millers, 1968). In general, it follows the techniques described by Foltz et al., 1968. Briefly, 4 branches are sampled from each of 10 trees (2 from mid-crown and 2 from lower crown) in a cluster at preselected locations. During egg survey in fall, 36 inch long branches were examined. For larval surveys, 18 inch long branches are sampled. Summer Students, FPC, and a crew at the Toumey Nursery, Watersmeet, Michigan, were responsible for branch examination. The results are expressed as number of budworms (or eggs) per 100 shoots (current growth tips) per plot. More than 40 budworms per 100 tips can be expected tocause heavy defoliation.

RESULTS

Tables 1 and 2 shows the results for both, the Huron and the Manistee National Forests. Maps 1 and 2 show the cluster locations.

Huron National Forest

The budworm populations generally declined between the egg and the early larval survey. The Luzerne and Hwy. #144 area (Clusters 403 and 405) may have some defoliation, while the remaining parts of the Mio R.D. have light budworm populations. The jack pines on the Harrisville R.D. can expect light to moderate defoliation. The lower half of Tawas R.D. (T22N and 23N) can expect moderate to heavy defoliation, while some browning of pine foliage may be present throughout the jack pine areas.

Manistee National Forest

Generally, budworm populations are low. Moderate defoliation may occur near Wolf Lake (Cluster 459).

TABLE I. JACK-PINE BUDWORM POPULATIONS ON THE HURON-MANISTEE NATIONAL FOREST

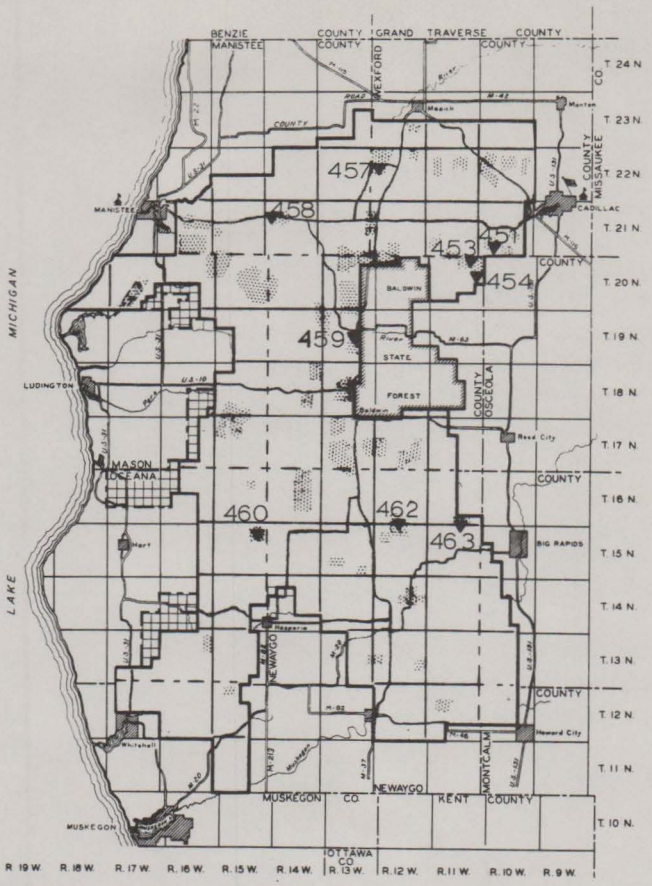
CLUSTER No.	FALL, 1968 Eggs/100 tips	SPRING, 1969 Larvae/100 tips
Huron National Forest		
401	11	1.67
402	5	0.75
403	124	12.09
405	34	16.76
407	14	2.39
408	50	7.77
411	94	17.06
420	50	23.81
412	37	9.08
413	294	14.95
414	15	34.09
415	66	30.01
416	95	11.40
Manistee National Forest		
451	2	1.50
453	7	0.59
454	1	0.48
457	0	0.80
458	40	8.81
459	31	31.80
460	10	5.47
462	13	3.19
463	4	0.95

REFERENCES

FOLTZ, J. L., F. B. Knight, D. C. Allen, A. J. Mattson, Jr. 1968. A technique for sampling populations of the jack-pine budworm. Forest Service 14(3): 277-281

MILLERS, I. 1968. Evaluation plan for jack-pine budworm larval populations on National Forests in the Lake States. USDA, Forest Service, NA S&PF, St. Paul Field Office. 5230. 6 pp.

MANISTEE NATIONAL FOREST



HURON NATIONAL FOREST